REMARKS

General

Inventor Richard Scheps is referred to herein as "Applicant".

U.S. Patent 5,740,190 issued on April 14, 1998 to Peter Moulton is referred to herein as "Moulton".

U.S. Patent 5,008,890 issued on April 16, 1991 to Ross McFarlane is referred to herein as "McFarlane".

U.S. Patent 5,894,489 issued on April 13, 1999 to Thorsteinn Halldorsson, et al. is referred to herein as "Halldorsson".

Status of the Claims

Claims 1-68 are rejected by the examiner.

By this amendment:

No claims have been amended.

Response to rejection of Claims 1-21, 35, 47, and 55 under 35 U.S.C. §103(a) as unpatentable over Moulton in view of McFarlane.

Applicant respectfully traverses the rejection of claims 1-21, 35, 47 and 55 for the following reasons.

The basic requirements of a *prima facie* case of obviousness àre set forth in MPEP §2143, which states:

> *"First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations."*

MPEP §2142 further states, in part, "*The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness.*" The rejection fails to establish a *prima facie* case of obviousness because (1) there has been **no** objective evidence (factual support) provided that would suggest or motivate the combination of the cited references; (2) there can be no reasonable expectation of success of the combination of references because Moulton is not combinable with McFarlane; and (3) the combination of cited references fails to teach each and every element claimed by Applicant. All of the claims are patentable over Moulton in view of McFarlane as is more fully explained below.

Regarding claims 1, 13, 21, 35, 47, and 55, the Examiner has stated in the Detailed Action, mailed November 11, 2003, "*For the advantageous [sic] of three color coherent light system, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Moulton with the upconversion laser as taught or suggested by McFarlane,*" but the Examiner has provided no further basis for this rejection. Therefore, the

rejection lacks any objective evidence in its support and appears to be based on 20-20 hindsight reconstruction of the references based on Applicants' own teachings. If the rejection is based on information within the personal knowledge of the Examiner, then Applicants request the Examiner provide all facts, within the personal knowledge of the Examiner that are used to support the rejection, in an affidavit pursuant with MPEP §2144.04, which states in part:

> *"When a rejection is based on facts within the personal knowledge of the examiner, the data should be stated as specifically as possible, and the facts must be supported, when called for by the applicant, by an affidavit from the examiner."*

Not only is there no suggestion to combine the references, the references themselves actually teach away from such a combination because Moulton is not combinable with McFarlane. Moulton includes a laser source 10 that produces a laser beam 12 in the 1000-1100 nm wavelength region, which is then frequency doubled into a beam 16 in the green wavelength. The beam 16 is then split by beam splitter 17, where a portion of the beam is sent to OPO 22 and another portion is output as green light. The OPO then splits the beam 18 into two new wavelengths, one which is frequency doubled to the red wavelength and the other which is frequency doubled to the blue wavelength. There is no upconversion in Moulton. The entire process of generating the RGB output of Moulton relies on a series of Frequency doublers (SHG's 14, 32, and 34). This point is stated explicitly by Moulton on Column 2, lines 47-50, *"The invention results from the realization that a pulsed solid state laser, preferably a Nd-doped material such as Nd:YAG or Nd:YLF, can be frequency doubled to generate green light..."*. Moulton then states, on column 2, lines 53-56, "*The signal wavelength is frequency doubled to generate blue light and the idler wavelength is frequency doubled to generate red light.*"

McFarlane, on the other hand, utilizes an upconversion laser pumped by a single wavelength infrared laser source operating at about 800nm (column 3, lines 5-8). The Examiner

has provided no basis for how to combine these two references. Combining Moulton and McFarlane would destroy the fundamental structure of Moulton and render it's operation and output significantly different from that intended by Moulton, much less the one claimed by Applicant. Moulton relies on a process of frequency doubling where the output wavelengths are achieved by SHG's 14, 30, and 34. Neither the references nor the Examiner have suggested or taught how to incorporate the upconversion laser of McFarlane into Moulton and still maintain the necessary wavelength ratios for an RGB output. McFarlane is an upconversion laser pumped with energy at 800nm, while Moulton includes a laser source 10 that operates in the 1000-1100nm range. Incorporating the upconversion laser of McFarlane into Moulton would result in outputs that are far different from those desired by Moulton, or even those desired by Applicant.

Lastly, even if there was a suggestion to combine the references, and they were, indeed, combinable, the resulting combination of Moulton and McFarlane do not teach each and every element claimed by Applicant. Each of the pending claims includes, among other things, a blue laser for generating a beam of blue light. None of the cited references teaches or suggests the use of a blue laser. Instead, Moulton uses a Nd:YLF or Nd:YAG laser that is frequency doubled to a green wavelength of 523.5nm. As stated previously, Moulton is premised on the realization that this type of laser can be frequency doubled to generate green light. There is no teaching or suggestion to use a blue laser as a pump source in Moulton or McFarlane. Accordingly, Applicant respectfully submits that claims 1, 13, 21, 35, 47, and 55 overcome the 35 USC 103(a) rejection and are now in condition for allowance. Reconsideration of this rejection is requested.

Claims 2 and 14 are patentable for the above-stated reasons.

Claims 3 and 15 are patentable for the above-stated reasons.

Claims 4, 6, and 17-20 are patentable for the above-stated reasons.

Claims 5 and 16 are patentable for the above-stated reasons. In addition, as stated in Applicants previous response, mailed July 24, 2003, Examiner has misread Moulton on two accounts: (1) there is no laser gain element used for upconversion in Moulton; and (2) Moulton does not teach or suggest the use of a *Praseodymium* (Pr) doped YALO crystal. Instead, what Moulton discloses on column 6, table 1 is the use of *Neodymium* (Nd) doped YALO crystal for use in the *laser* (FIG 1, numeral 10). Laser 10, of Moulton, is used to generate energy that is used to pump an Optical Parametric Oscillator 22, not for upconversion, as admitted by Examiner on page three of the Detailed Action, mailed November 19, 2003, "*...Moulton does not disclose first/second upconversion laser...*". Since the cited prior art fails to teach each and every element claimed, Applicant respectfully submits that claims 5 and 16 are in condition for allowance. Reconsideration of this rejection is requested.

Claims 7-12 are patentable for the above-stated reasons. In addition, as stated in Applicants previous response, mailed July 24, 2003, Moulton does not disclose a wavelength selective device for combining a beam of red, a beam of green, and a beam blue light into a single beam of combined red, green, and blue light. Examiner has cited beam (12) of FIG. 1, of Moulton, but has provided no other support for this rejection. In fact, Examiner has admitted that Moulton and McFarlane do not disclose combining the red, green, and blue beams into a single beam in a separate 35 USC §103 rejection. See page 3, item 4, second sentence of the Detailed Action mailed November 19, 2003: "*...Moulton and McFarlane et al disclose all limitations as set forth in claims 1 and 21 except for red/green/blue light are combined into a single collinear beam...*". Beam 12, of Moulton, is not the result of a wavelength selective device combining three distinct beams. Instead, it is the output of laser 10. Nowhere in the cited references is there a suggestion or teaching that the red, green, and blue output beams be combined into a single

RGB beam. Furthermore, there is no suggestion or teaching, in the cited references of the use of a wavelength selective device, much less one that is a prism or a diffraction grating, as claimed by Applicant. Since the cited prior art fails to teach each and every element claimed by Applicant, it is respectfully submitted that claims 7-12 are in condition for allowance. Reconsideration of this rejection is requested.

Response to rejection of Claims 22-34, 36-46, 48-54, and 56-68 under 35 U.S.C. §103(a) as unpatentable over Moulton in view of McFarlane further in view of Halldorsson.

Applicant respectfully traverses the rejection of claims 22-34, 36-46, 48-54 and 56-68 for the above-stated reasons. In addition, MPEP §2143.03 states that if any independent claim is non-obvious under 35 U.S.C §103, then any claim depending therefrom is nonobvious. Therefore, claims 22-34, 36-46, 48-54, and 56-68, which depend from claims 21, 35, 47, and 55, respectively are patentable over the cited references.

Furthermore, Examiner has stated, on page 5 of the Detailed Action mailed November 19, 2003, that, "*Halldorsson et al disclose red/green/blue lights are combined into a single collinear beam and single collinear beam is substantially white, note col.3.*" Applicant's Agent has carefully read column 3 and the rest of Halldorsson, but has seen no mention or suggestion that the red/green/blue lights are combined into a single beam, much less one that is substantially white. If Examiner continues to assert this rejection, Applicants, again, request that its basis be explained and the exact location in Halldorsson where the suggestion of combining the red/green/blue lights into a single collinear beam be given in a non-final office action so that Applicant may be given fair opportunity to reply. Absent such a showing, Applicant submits that claims 22-34, 36-46, 48-54, and 56-68 are directed to patentable subject matter. Accordingly,

Applicant respectfully requests reconsideration of the 35 U.S.C. §103(a) rejection of claims 22-34, 36-46, 48-54 and 56-68.

Conclusion

Applicant respectfully requests withdrawal of the rejections of claims 1-68 under 35 USC. §103(a). Accordingly, Applicant respectfully submits that this application is now in condition for allowance. Early allowance of claims 1-68 is solicited.

No Fee is required for this response.

Respectfully submitted,

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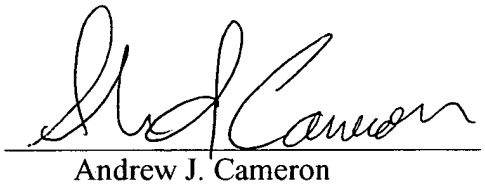
By 

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